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# ABSTRACT

## Clinico-radiological predictors of favorable outcome and quality of life in patients undergoing percutaneous sclerotherapy for slow flow vascular malformations

**BACKGROUND:**

Slow flow vascular malformations are one of the commonest soft tissue lesions in children and young adults. They include venous malformations (VM) and lymphatic malformations (LM). They cause significant morbidity in terms of cosmesis and functional impairment. Surgical resection is often incomplete, and proximity to vital deeper structures are a common reason for incomplete resections. Sclerotherapy is a treatment method by which a sclerosant is injected into the cystic vascular spaces. Percutaneous sclerotherapy has become the standard of care for slow flow vascular malformations worldwide.

**AIMS & OBJECTIVES:**

The aim of this study was to objectively evaluate the improvement in symptoms and quality of life in patients receiving percutaneous sclerotherapy for slow flow vascular malformations. Additionally, the study attempted to identify clinical and radiological predictors of a favorable outcome in patients undergoing this procedure.

**MATERIALS & METHODS:**

Patients who were referred to the interventional radiology clinic for the first time were included in this study after informed consent. Sodium Tetradecyl Sulfate (STS) was injected into the venous malformations. STS and bleomycin were injected into the lymphatic malformations. A modified form of a standardized questionnaire (SF-36) was used to assess the quality of health life. The questionnaire was administered to the

patient prior to the sclerotherapy and at three-time points after sclerotherapy- day1, day 3 and day 7. The basic demographics of the patient as well as specific radiological features such as type and the extent of involvement was used for analysis.

**RESULTS:**

There were 53 patients, with age ranging from 2-47 years. There were 23 males and 30 females. There were 37 patients with VM and 16 with LM. There was a statistically significant difference in the means of the quality of life pre-sclerotherapy, and day 7 post sclerotherapy scores ($p<0.0001$). There was also a statistically significant association between the earlier age of presentation with better quality of life ($p=0.019$, Pearson coefficient of 0.320, suggesting moderate correlation). The analysis also revealed a transient worsening of the quality of life scores immediately following sclerotherapy (day 1) with improvement at day 7. The other parameters such as the plane of the malformation, type, pre-treatment size, number of needles did not have a statistically significant association with the quality of life. There was no significant difference in quality of life between the patients with VM or LM.

**CONCLUSION**

Sclerotherapy for slow flow vascular malformations is a safe and reliable way to treat patients. Earlier age of first session of sclerotherapy was associated with a significantly better outcome in terms of quality of life. There was a significant association between the volume of foam sclerosant injected and better quality of life. The use of sclerosant should be limited in the head of neck region (lip and tongue) where there is high risk of tissue necrosis. Patients should be informed of the natural course of events, where there is a transient worsening of the symptoms immediately after sclerotherapy due to the local inflammatory response.

**KEYWORDS:**

Sclerotherapy, slow flow vascular malformations, venous malformation, lymphatic malformation, quality of life.